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ABSTRACT

A study examined the opinions of agriculture teachers, school administrators, students, and parents concerning females as agriculture students, teachers, and workers in agriculture. A survey instrument to collect respondent demographic data and a questionnaire to measure sex bias were completed by the following groups connected with Kansas vocational agriculture programs: 154 teachers, 132 administrators, 576 students (approximately 7 percent of the student enrollment in the state), and 390 parents. Included among those data collected by the instruments were respondent age, sex, years of teaching experience, program emphasis, years of schooling completed, socioeconomic background, student plans after high school, overall sex bias rating, vo-ag student enrollee bias, worker sex bias, and female teacher bias. All four types of respondents indicated that students, teachers, administrators, and parents do not encourage females to enroll in vocational agriculture courses. While all investigated groups exhibited support for employment opportunities for females and for female enrollment, they all revealed a preference for male workers in agricultural occupations. Students seemed slightly opposed to female agricultural education teachers. Recommendations called for developing programs to show career opportunities for females in agriculture and to recruit female students into vocational agriculture. (MN)

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OPINIONS OF AGRICULTURE TEACHERS, SCHOOL ADMINISTRATORS,
STUDENTS AND PARENTS CONCERNING FEMALES AS AGRICULTURE
STUDENTS, TEACHERS AND WORKERS IN AGRICULTURE

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versity Department of Adult and Occupational Education in
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INTRODUCTION

A review of recent enrollment of females in vocational agriculture programs in Kansas reveals yearly totals of approximately 10 percent. Due to the lack of significant increase in the number of females enrolling in vocational agriculture courses, this study was designed to determine if barriers exist that tend to limit female enrollment.

In light of current policies regarding equal access of students to educational programs, the current investigation focused on opinions of agriculture teachers, administrators in schools that have agriculture programs, agriculture students and parents of agriculture students.

OBJECTIVES

The specific research questions investigated were:

1. What are the opinions of agriculture teachers, administrators of schools with agriculture programs, agriculture students and parents of agriculture students regarding females as students of vocational agriculture.
2. What are the opinions of agriculture teachers, administrators of schools with agriculture programs, agriculture students and parents of agriculture students regarding females as workers in agriculture.
3. What are the opinions of agriculture teachers, administrators of school with agriculture programs, students of agriculture and parents of agriculture students regarding females as teachers of vocational agriculture.

METHODOLOGY

Population and Sample

The target population of this study was Kansas vocational agriculture

teachers, administrators of schools with vocational agriculture programs, students of vocational agriculture and parents of students enrolled in vocational agriculture. The accessible population was the state's vocational agriculture teachers, one administrator in each Kansas school with vocational agriculture programs, students in 20 randomly selected Kansas vocational agriculture programs and parents of students enrolled in randomly selected programs. Each vocational agriculture teacher (n=187) was invited to participate as they received a letter of explanation and a questionnaire. Responses were received from 82 percent (n=154) teachers. One administrator in each school with a vocational agriculture program (n=162) received a letter of explanation and a questionnaire. Subsequently, responses were received from 81 percent (n=132) of the administrators.

Twenty vocational agriculture programs were invited to participate as it had been determined that this number of schools would be needed to provide a sample size of 800 (10 percent of the student population). Sixteen schools expressed a desire to participate. Due to the approaching end of the school year, the investigators were unable to contact additional schools. Participating schools were mailed questionnaires and letters of explanation for parents. The final student sample was 576 (approximately 7 percent of the total student enrollment in the state).

Parents were contacted by letters of explanation which were mailed to participating vocational agriculture teachers for distribution. Parents were asked to indicate their willingness to participate and return their address in an envelope provided. Parents forms were received from 461 respondents while only 390 parent questionnaires were received.

Random samples of non-respondents were drawn for follow-up purposes. Seven vocational agriculture teachers (21 percent of the non-respondents),

six school administrators (20 percent of the non-respondents), and 14 parents (20 percent of the non-respondents) were contacted. When the follow-up data was subjected to T-Test analysis, the investigators found no significant differences in the responses of the randomly selected non-respondents when compared to the responding groups. The responses received from students in participating schools were accepted as being the student sample.

Design

The study was a descriptive design, the purpose of which was to describe the sample on the identified factors.

Instrumentation and Data Collection

The Teacher Information Sheet, Administrator Information Sheet, Student Information Sheet and Parent Information Sheet were developed by the investigators and consisted of forms for collecting demographic data. The demographic data collected from respondents included age and sex from all respondents. In addition, teachers were asked to indicate the number of years of experience and the taxonomy areas stressed in their program. Parents were asked to report the number of children they had enrolled in vocational agriculture courses. Students were requested to signify the year of school they were completing, the years of vocational agriculture they were completing, the nature of their occupational experience program; the years of formal education completed by male and female parents or guardians, the occupation of male and female parents or guardians, plans when leaving school and areas of agriculture in which they were interested. The demographic data were collected to describe the sample. The Sex Bias Questionnaire was also developed by the investigators to assess

measures of sex bias. This questionnaire was administered to each group. The measures of sex bias were: bias related to the enrollment of female students in vocational agriculture (student bias), bias related to appropriateness of careers in agriculture for females (worker bias), bias related to appropriateness of the vocational agriculture teaching profession for females (teacher bias) and an overall measure of female sex bias.

All instruments were reviewed by the Agricultural Education staff and the State Department of Education Sex Equity Specialist for face validity. Additionally, the instruments were field tested with groups of students, teachers, administrators and parents who were not selected in the sample. The field test was conducted to determine if refinements needed to be made prior to final printing of instruments. Field test subjects reported no problems in interpreting the instrument. Following the field test, an internal consistency coefficient was calculated for the Sex Bias Questionnaire. A Cronbach's alpha of .78 resulted. According to Ebel (1979), the internal consistency coefficient indicated adequate reliability to begin the investigation. Following the completion of the investigation, a Cronbach's alpha of .86 was calculated for the Sex Bias Questionnaire.

Measures of Sex Bias

Responses to items on the questionnaire were coded as follows:

Very Strongly Agree	Strongly Agree	Agree	Disagree	Strongly Disagree	Very Strongly Disagree
15	11	9	7	5	1

This coding system is based on the Certainty Method developed by Warren, Klonglan and Sabri (1969). The underlying assumption of the Certainty Method is that responses at the extreme ends of the response framework represent responses that are of a greater magnitude than the responses closer to the center of the response framework.

Student Bias

The variable student bias was calculated from subject responses to statements about whether or not girls should be encouraged to enroll in vocational agriculture, whether or not agriculture classes caused girls to become too soiled, whether or not students make fun of girls enrolled in vocational agriculture, whether or not enrollment in vocational agriculture classes is open to girls, whether or not boys should be given first preference when enrollment in vocational agriculture is limited and whether or not subjects would encourage daughters to enroll in vocational agriculture. All questions were coded with responses of 9 or higher indicating agreement with female student enrollment. Responses less than 9 indicated disagreement with female student enrollment. A student bias mean was subsequently calculated for each respondent.

Worker Bias

To determine if respondents expressed bias toward female workers in agriculture, a set of matched statements was developed asking subjects to express opinions about the appropriateness of selected occupations for males and for females. Two occupations were selected because of their association as being male oriented, i.e., tractor operators and meat cutters. Two other occupations were selected because of their association as being female oriented, i.e., agribusiness bookkeepers and flower arrangers. Other occupations were selected that often associated with both males and females, i.e., crop farmers, livestock farmers, and horse trainers.

The variable was calculated by subtracting the response for the male statement from the response for the female statement. For example, when the response for the statement about flower arranging being an appropriate

occupation for males was subtracted from the response for the statement about flower arranging being an appropriate occupation for females, zero would indicate that the subject did not differ in opinion about the appropriateness of the occupation for males and females. Negative numbers would indicate opinions favoring males. While positive numbers would reveal opinions favoring females. A mean was calculated for each subject for all occupations.

Female Vocational Agriculture Teacher Bias

Subjects were asked to respond to statements about females as vocational agriculture teachers. Responses were with value 9 or above indicating agreement with females being able to teach vocational agriculture. Values of less than 9 indicated disagreement with females being able to teach vocational agriculture.

Overall Female Sex Bias

Respondents were asked to indicate agreement or disagreement with statements concerning girls abilities to support themselves financially, a woman's place being in the home, married women working to help support a family and parents encouraging female students to enroll in traditionally all male courses. Mean responses were calculated for each subject. The mean response constituted the overall female sex bias variable.

FINDINGS

Description of the Sample

Sex

Data summarized in TABLE 1 indicate that 84 percent of the respondents were males. It should be noted that 99 percent of the teacher and administrator respondents were male. Female student responses comprised 13 percent of the student respondents. The participation of female students in the study compares favorably with the percentage of female students enrolled in vocational agriculture in the state.

TABLE 1

SEX OF RESPONDENTS BY TYPE OF RESPONDENT

	Respondent Type									
	<u>Teachers</u>		<u>Administrators</u>		<u>Students</u>		<u>Parents</u>		<u>All Cases</u>	
	n	%	n	%	n	%	n	%	n	%
MALE	153	99.4	131	99.2	500	87	270	69	1054	84
FEMALE	1	.6	1	.8	76	13	120	31	198	16
TOTAL	154	100	132	100	576	100	390	100	1252	100

Age

It can be seen by observing TABLE 2 that all of the students were between the ages of 14 and 19 with a mean of 15. The means for the administrators and parents were 42 and 43 respectively. The teachers tended to be somewhat younger with a mean of 35.

TABLE 2
AGE OF RESPONDENTS BY
TYPE OF RESPONDENT

Age Categories	Respondent Type									
	<u>Teachers</u>		<u>Administrators</u>		<u>Students</u>		<u>Parents</u>		<u>All Cases</u>	
	n	%	n	%	n	%	n	%	n	%
14 to 19	0	0	0	0	576	100	0	0	576	46
20 to 29	69	45	6	5	0	0	3	1	78	6
30 to 39	45	29	52	40	0	0	184	47	281	22
40 to 49	20	13	49	37	0	0	118	30	187	15
50 to 59	8	5	21	16	0	0	67	17	96	8
60 to 69	12	8	3	2	0	0	18	5	33	3
TOTAL	154	100	131	100	576	100	390	100	1251	100
Median	31.2		40.7		15.2		40.1		25.6	
Mean	34.8		41.8		15.3		42.8		29.0	
Standard Deviation	12.1		7.9		1.2		7.7		14.5	
Minimum	22		25		14		25		14	
Maximum	68		61		18		66		68	

Teaching Experience

Teachers were asked to indicate the number of years of teaching experience completed. The data in TABLE 3 indicate that 47 percent of the teacher respondents had completed less than six years of teaching. An additional 16 percent had completed six to ten years.

TABLE 3
YEARS OF TEACHING EXPERIENCE
COMPLETED BY RESPONDENTS

Years Completed	n	%
1 to 5	73	47
6 to 10	28	18
11 to 15	14	9
16 to 20	9	6
21 to 25	13	9
26 to 30	7	5
31 to 35	4	3
36 or more	5	3
TOTAL	154	100
Median	6.8	
Mean	10.5	
Standard Deviation	10.6	
Minimum	1	
Maximum	44	

Program Emphasis

Teachers were asked to specify the agricultural subject matter area or areas emphasized in their program. An inspection of TABLE 4 reveals that 57 percent of the respondents reported teaching in production agriculture programs. Another 15 percent indicated teaching in programs with

emphasis on both production agriculture and specialized courses in agricultural mechanics. An additional 17 percent reported teaching in programs that emphasized specialized courses in agricultural supplies and services as well as production agriculture and specialized courses in agricultural mechanics..

TABLE 4

AGRICULTURAL EDUCATION PROGRAM
EMPHASIS REPORTED BY RESPONDENTS

Program Emphasis	n	%
Production Agriculture	88	57
Ag. Mechanics	2	1
Production Ag., Ag. Mechanics	23	15
Production Ag., Ag. Supplies and Services	4	3
Production Ag., Ag. Supplies and Services, Ag. Mechanics	26	17
Production Ag., Horticulture	4	3
Production Ag., Ag. Mechanics, Horticulture	2	1
Production Ag., Ag. Supplies and Services, Ag. Mechanics, Horticulture	3	2
Production Ag., Ag. Supplies and Services, Horticulture	2	1
TOTAL	154	100

Years of High School Completed by Students

A review of the data in TABLE 5 reveals that 33 percent of the student respondents had completed one year of high school. The data further reveal

that 55 percent of the student respondents had completed either two or three years of high school. Only 12 percent of the student respondents had completed four years of high school.

Years of Agriculture Completed by Students

The data in TABLE 5 further reveal that 73 percent of the student respondents had completed one or two years of vocational agriculture. Only four percent of the student respondents had completed four years of vocational agriculture.

TABLE 5

YEARS OF HIGH SCHOOL AND YEARS OF AGRICULTURE INSTRUCTION COMPLETED BY STUDENT RESPONDENTS

Years Completed	<u>High School</u>		<u>Agriculture Instruction</u>	
	n	%	n	%
1	191	33	272	47
2	141	25	148	26
3	172	30	132	23
4	69	12	24	4
TOTAL	576	100	576	100

Student Socioeconomic Background

Socioeconomic background was quantified using the Hollingshead (1957). Two Factor Index of Social Position. Students were asked to provide the occupational title of both male and female parent and the number of years of schooling completed by each parent. Data summarized in TABLE 6 reveal that 89 percent of the student respondents reported backgrounds which were

classified as being socioeconomic class four or five. The data also indicate that no student reported a background that could be classified as socioeconomic class one (the top class).

TABLE 6
STUDENTS' SOCIOECONOMIC BACKGROUND RATINGS

Socioeconomic Classes	n	%
22 - 54 (V)	237	41
55 - 88 (IV)	275	48
89 - 120 (III)	52	9
121 - 140 (II)	12	2
141 - 154 (I)	0	0
TOTAL	576	100

Student Interest in Agricultural Education

Five taxonomy areas or subject matter areas are recognized in agricultural education in Kansas (Kansas State Department of Education, 1980). These taxonomy areas are production agriculture, agricultural supplies and services, agricultural mechanics, horticulture and natural resources. Students were asked to indicate which agricultural taxonomy area in which they were most interested. The figures contained in TABLE 7 reveal that 51 percent of the student respondents reported an interest in production agriculture. An additional 30 percent reported an interest in agricultural mechanics.

TABLE 7
STUDENT INTEREST IN AGRICULTURAL
EDUCATION TAXONOMY AREAS

Taxonomy Areas	n	%
Production Agriculture	292	51
Agricultural Supplies and Services	36	6
Agricultural Mechanics	172	30
Horticulture	32	6
Natural Resources	44	7
TOTAL	576	100

Student Occupational Experience Programs

The Student Information Sheet asked students to indicate the nature of their supervised occupational experience program. Students reported programs in farming or ranching, non-farm agriculture, outside of agriculture or that they did not have a supervised occupational experience program. The data in TABLE 8 indicate 70 percent of the student respondents reported occupational experience programs in farming or ranching. Only eight percent report not having a program.

TABLE 8

NATURE OF SUPERVISED OCCUPATIONAL EXPERIENCE
PROGRAM REPORTED BY STUDENT RESPONDENTS

Program Categories	n	%
Farming or Ranching	407	70
Non Farm Agriculture	81	14
Non Agriculture	44	8
No Supervised Occupational Experience Program	44	8
TOTAL	576	100

Student Plans After High School

Students were also asked to indicate their plans after leaving high school. Specifically, they were asked to indicate if they were planning immediate employment in agriculture, immediate employment in a job other than agriculture, further education in agriculture, further education in an area other than agriculture, or no employment or education. It can be seen by observing the data in TABLE 9 that 56 percent of the student respondents indicated employment or education plans in agriculture. The data also reveal that 26 percent of the student respondents plan further education in an area other than agriculture.

TABLE 9
STUDENT PLANS AFTER HIGH SCHOOL

Plan Categories	n	%
Immediate Employment in an Agricultural Job	133	23
Immediate Employment in a Non Agricultural Job	84	15
Further Education in Agriculture	191	33
Further Education in an Area Other than Agriculture	148	26
Not Immediate Employment or Further Education	20	3
TOTAL	576	100

Enrollment of Children in Vocational Agriculture

Parents were asked to report the number of children they had presently enrolled in vocational agriculture. It can be seen by observing the data in TABLE 10 that eight percent of the parents reported having only girls enrolled while 72 percent reported having only boys enrolled.

TABLE 10

NUMBER OF SONS AND DAUGHTERS ENROLLED IN VOCATIONAL
AGRICULTURE CLASS REPORTED BY PARENT RESPONDENTS

Number of Children	Number of Parents Reporting			
	Sons		Daughters	
	n	%	n	%
0	32	8	283	72
1	229	59	69	18
2	83	22	30	8
3	27	7	8	2
4	14	4	0	0
TOTAL	390	100	390	100

Presentation of Data

Encouragement of Male and Female Students to Enroll in Vocational Agriculture

All of the responding groups were asked to indicate whether or not they felt teachers, administrators, students and parents encourage both male and female students to enroll in agriculture courses. The following discussion summarizes responses to specific statements about encouragement of male and female students to enroll in vocational agriculture.

TEACHERS. Subjects were asked to respond to the statement, "Vocational agriculture teachers encourage both male and female students to enroll in agriculture courses." From the data summarized in TABLE 11, it can be seen that vocational agriculture teacher respondents tended to feel that vocational agriculture teachers do not encourage both male and female students to enroll in vocational agriculture as indicated by the mean of 8.3. Group means of 9.0 or above indicate agreement with the statement.

ADMINISTRATORS. Subjects were asked to respond to the statement "Administrators encourage both male and female students to enroll in agriculture courses." A review of the data summarized in TABLE 12 reveals that students tend to disagree with the statement (mean 8.7). The means of the other groups indicate agreement with the statement.

STUDENTS. The data in TABLE 13 summarizes responses to the statement "Students encourage both male and female students to enroll in agriculture courses." A review of the data indicates parents were the only group agreeing with the statement. The other groups indicated disagreement with the statement.

TABLE 11
 RESPONSES TO STATEMENT "TEACHERS ENCOURAGE
 BOTH MALE AND FEMALE STUDENTS TO ENROLL IN
 AGRICULTURE COURSES" BY TYPE OF RESPONDENT

Response Categories	Respondent Type									
	Teachers		Administrators		Students		Parents		All Cases	
	n	%	n	%	n	%	n	%	n	%
Very Strongly Disagree (1)	3	2	0	0	12	2	0	0	15	1
Strongly Disa- gree (5)	16	10	0	0	8	1	0	0	24	2
Disagree (7)	47	31	6	4	8	1	33	9	94	7
Agree (9)	66	43	34	26	173	30	137	35	410	33
Strongly Agree (11)	15	10	59	45	179	31	142	36	395	32
Very Strongly Agree (15)	7	4	33	25	196	35	78	20	314	25
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	8.3		10.9		11.0		10.4		10.4	
Mean	8.3		11.3		11.4		10.8		10.8	
Standard Deviation	2.4		2.4		3.0		2.4		2.9	
Minimum	1		1		1		7		1	
Maximum	15		15		15		15		15	

TABLE 12

RESPONSES TO STATEMENT "ADMINISTRATORS ENCOURAGE
BOTH MALE AND FEMALE STUDENTS TO ENROLL IN
AGRICULTURE COURSES" BY TYPE OF RESPONDENT

Response Categories	Respondent Type									
	Teachers		Administrators		Students		Parents		All Cases	
	n	%	n	%	n	%	n	%	n	%
Very Strongly Disagree (1)	4	3	0	0	32	5	11	3	47	4
Strongly Disa- gree (5)	4	3	0	0	40	7	2	1	46	4
Disagree (7)	32	21	3	2	120	21	81	21	236	19
Agree (9)	80	52	38	29	243	42	206	53	567	45
Strongly Agree (11)	19	12	51	39	80	14	68	17	218	17
Very Strongly Agree (15)	15	9	40	30	61	11	22	5	138	11
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	8.9		11.0		8.8		8.9		9.1	
Mean	9.1		11.6		8.7		9.0		9.2	
Standard Deviation	2.6		2.5		3.1		2.3		2.9	
Minimum	1		7		1		1		1	
Maximum	15		15		15		15		15	

TABLE 13

RESPONSES TO STATEMENT "STUDENTS ENCOURAGE
BOTH MALE AND FEMALE STUDENTS TO ENROLL IN
AGRICULTURE COURSES" BY TYPE OF RESPONDENT

Response Categories	Respondent Type									
	Teachers		Administrators		Students		Parents		All Cases	
	n	%	n	%	n	%	n	%	n	%
Very Strongly Disagree (1)	0	0	4	3	36	6	0	0	40	3
Strongly Dis- agree (5)	10	6	6	5	36	6	8	2	60	5
Disagree (7)	43	29	26	20	132	23	114	29	315	25
Agree (9)	63	41	57	43	255	44	131	33	506	40
Strongly Agree (11)	28	18	36	27	84	15	88	23	236	19
Very Strongly Agree (15)	10	6	3	2	33	6	49	13	95	8
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	8.8		9.1		8.7		9.1		8.8	
Mean	8.9		8.8		8.4		9.5		8.9	
Standard Deviation	2.3		2.3		2.9		2.6		2.7	
Minimum	5		1		1		5		1	
Maximum	15		15		15		15		15	

PARENTS. Subjects were also asked to respond to the statement "Parents encourage both male and female students to enroll in agriculture courses." From the information recorded in TABLE 14, it can be observed that teachers exhibited a slight tendency to disagree with the statement (mean 8.9). All other groups agreed with the statement.

TABLE 14

RESPONSES TO STATEMENT "PARENTS ENCOURAGE
BOTH MALE AND FEMALE STUDENTS TO ENROLL IN
AGRICULTURE COURSES" BY TYPE OF RESPONDENT

Response Categories	<u>Respondent Type</u>									
	<u>Teachers</u>		<u>Administrators</u>		<u>Students</u>		<u>Parents</u>		<u>All Cases</u>	
	n	%	n	%	n	%	n	%	n	%
Very Strongly Disagree (1)	2	1	1	1	20	4	0	0	23	2
Strongly Disa- gree (5)	8	5	5	4	8	1	0	0	21	2
Disagree (7)	42	28	16	12	88	15	49	13	195	16
Agree (9)	65	42	55	41	296	51	186	48	602	48
Strongly Agree (11)	28	18	50	38	136	24	91	23	305	24
Very Strongly Agree (15)	9	6	5	4	28	5	64	16	106	8
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	8.8		9.6		9.2		9.6		9.3	
Mean	8.9		9.5		9.1		10.2		9.5	
Standard Deviation	2.4		2.1		2.4		2.4		2.4	
Minimum	1		1		1		7		1	
Maximum	15		15		15		15		15	

Overall Sex Bias

To calculate a measure of overall sex bias, subjects were asked to respond to statements concerning girls being prepared to support themselves financially, a woman's place being in the home, married women working, girls taking welding courses and whether or not subjects would encourage daughters to enroll in vocational agriculture. The data were coded with values of less than 9.0 indicating opinions opposing employment opportunities for females. Values of 9.0 or more indicated support for female employment opportunities. The data in TABLE 15 reveal support for female employment opportunities from all groups.

Vocational Agriculture Student Enrollee Bias

Student enrollee bias was determined by subjects responding to statements about girls enrolling in traditionally all male courses like vocational agriculture, agriculture classes causing girls to become too soiled, girls who enroll in agriculture classes being made fun of, girls being able to enroll in agriculture classes, boys receiving preference when enrollment in agriculture is limited and daughters being encouraged to enroll in agriculture classes. The data were coded with values of less than 9.0 indicating opinions opposing female enrollment. Values of 9.0 or more indicate support for female enrollment. A review of the data in TABLE 16 reveal support for female enrollment in vocational agriculture from all groups.

Agricultural Worker Bias

To determine sex bias related to agricultural employment opportunities, paired statements on the appropriateness of selected agricultural occupations for males and females were developed. One set of statements address

TABLE 15
OVERALL SEX BIAS RATINGS BY TYPE OF RESPONDENT

Sex Bias Ratings	Respondent Type									
	Teachers		Administrators		Students		Parents		All Cases	
	n	%	n	%	n	%	n	%	n	%
Very Strongly Opposed to Employment Opportunities for Females (less than 5)	0	0	0	0	20	3	0	0	20	2
Strongly Opposed to Employment Opportunities for Females (5 to 6)	1	0.6	1	1	12	2	27	7	41	3
Opposed to Employment Opportunities for Females (7 to 8)	20	13	12	9	129	23	68	17	229	18
Favor Employment Opportunities for Females (9 to 10)	57	37	65	49	260	45	166	43	548	44
Strongly Favor Employment Opportunities for Females (11 to 12)	54	35	41	31	103	18	111	28	309	25
Very Strongly Favor Employment Opportunities for Females (13 or more)	22	14.4	13	10	52	9	18	5	105	8
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	10.4		10.0		9.1		9.5		9.5	
Mean	10.4		10.1		9.3		9.5		9.6	
Standard Deviation	1.7		1.5		2.1		1.9		2.0	
Minimum	5.8		6.2		1.8		5.0		1.8	
Maximum	15.0		14.2		15.0		15.0		15.0	

TABLE 16

VO-AG STUDENT ENROLLEE BIAS RATINGS BY TYPE OF RESPONDENT

Rating Categories	Respondent Type									
	<u>Teachers</u>		<u>Administrators</u>		<u>Students</u>		<u>Parents</u>		<u>All Cases</u>	
	n	%	n	%	n	%	n	%	n	%
Very Strongly Opposed to Females Being Vo-Ag Students (Less than 5)	0	0	0	0	4	.6	0	0	4	.4
Strongly Opposed to Females Being Vo-Ag Students (5 to 6)	1	.6	2	1	16	2.4	12	3	31	3
Opposed to Females Being Vo-Ag Students (7 to 8)	21	13.4	22	17	153	27	113	29	309	25
Favor Females Being Vo-Ag Students (9 to 10)	60	39	79	60	279	48	214	55	632	50
Strongly Favor Females Being Vo-Ag Students (11 to 12)	60	39	22	17	92	16	34	9	208	16.6
Very Strongly Favor Females Being Vo-Ag Students (13 or more)	12	8	7	5	32	6	17	4	68	5
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	10.1		9.4		9.1		8.8		9.1	
Mean	10.2		9.6		9.4		9.2		9.5	
Standard Deviation	1.6		1.4		1.8		2.2		1.9	
Minimum	6.3		6.3		2.6		5.7		2.7	
Maximum	14.3		15.0		15.0		15.0		15.0	

the appropriateness of the following occupations for males: horse trainer, tractor operator, crop farmers, livestock rancher, flower arranger, book-keeper and meat cutter. The other set of statements addressed the appropriateness of the same occupations for females. The response for male workers was then subtracted from the response for female workers. A resulting value of zero indicated no preference for male or female workers in the occupation. Negative values (values less than zero) indicated a preference for males in the occupation. Positive values (values above zero) indicated a preference for female workers. The individual occupations were then added and a mean calculated. The data in TABLE 17 reveal that all groups expressed a preference for male workers as the group means ranged from -2.2 to -6.0. Students (mean = -4.3) and parents (mean = -6.0) indicated the highest preference for male workers.

Teacher Bias

Respondents were asked to express opinions about females teaching vocational agriculture. Responses were coded with values of less than 9.0 indicating opposition to females teaching vocational agriculture. Values of 9.0 or higher indicated support for females as vocational agriculture teachers. It can be observed from the data in TABLE 18 that students expressed slight opposition to females as vocational agriculture teachers (mean = 8.7). All other groups expressed support for females as vocational agriculture teachers.

TABLE 17

WORKER SEX BIAS RATINGS BY TYPE OF RESPONDENT

Worker Bias Ratings	Respondent Type									
	<u>Teachers</u>		<u>Administrators</u>		<u>Students</u>		<u>Parents</u>		<u>All Cases</u>	
	n	%	n	%	n	%	n	%	n	%
Very Strong Preference for Male Workers (-20 or less)	6	4	6	5	40	7	53	14	105	8
Strong Preference for Male Workers (-10 to -19)	22	14	12	9	124	22	74	19	232	19
Preference for Male Workers (-1 to -9)	68	44	54	41	224	39	131	33	477	38
No Preference (0)	28	18	34	26	63	11	60	15	185	15
Preference for Female Workers (1 to 9)	24	16	19	14	76	13	43	11	162	13
Strong Preference for Female Workers (10 to 19)	5	3	3	2	36	6	22	6	66	5
Very Strong Preference for Female Workers (20 or more)	1	1	4	3	13	2	7	2	25	2
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	-2.4		-1.6		-4.4		-4.6		-4.0	
Mean	-3.8		-2.2		-4.3		-6.0		-4.5	
Standard Deviation	8.4		10.7		10.5		11.2		10.6	
Minimum	-30		-30		-30		-30		-30	
Maximum	28		30		24		30		30	

TABLE 18
FEMALE TEACHER BIAS BY TYPE OF RESPONDENT

Rating Categories	Respondent Type									
	Teachers		Administrators		Students		Parents		All Cases	
	n	%	n	%	n	%	n	%	n	%
Very Strongly Opposed to Females as Vo-Ag Teachers (Less than 5)	3	2	0	0	51	9	0	0	54	4
Strongly Opposed to Females as Vo-Ag Teachers (5 to 6)	8	5	2	1	32	6	0	0	42	3
Opposed to Females as Vo-Ag Teachers (7 to 8)	19	12	9	7	112	19	77	20	217	17
Favor Females as Vo-Ag Teachers (9 to 10)	48	31	74	56	201	35	195	50	518	42
Strongly Favor Females as Vo-Ag Teachers (11 to 12)	43	28	26	20	116	20	52	13	237	19
Very Strongly Favor Females as Vo-Ag Teachers (13 or more)	33	22	21	16	64	11	66	17	184	15
TOTAL	154	100	132	100	576	100	390	100	1252	100
Median	10.0		9.5		8.9		9.2		9.2	
Mean	10.2		10.2		8.7		9.9		9.5	
Standard Deviation	3.2		2.4		3.5		2.6		3.1	
Minimum	1		5		1		7		1	
Maximum	15		15		15		15		15	

CONCLUSIONS AND RECOMMENDATIONS

In light of low enrollment of females in vocational agriculture in Kansas, this investigation was conducted to determine:

1. What are the opinions of agriculture teachers, administrators of schools with agriculture programs, agriculture students and parents of agriculture students regarding females as students of vocational agriculture.
2. What are the opinions of agriculture teachers, administrators of schools with agriculture programs, agriculture students and parents of agriculture students regarding females as workers in agriculture.
3. What are the opinions of agriculture teachers, administrators of schools with agriculture programs, students of agriculture and parents of agriculture students regarding females as teachers of vocational agriculture.

To facilitate the investigation, all vocational agriculture teachers, an administrator in each school with a vocational agriculture program, students and their parents in randomly selected schools were surveyed. The sample provided 1,252 responses to survey instruments. Non-respondents were randomly surveyed to determine if they would respond differently than the participating respondents. Following analysis of the follow-up data, it was determined that non-respondents did not respond differently than participating respondents.

Conclusions

Conclusions drawn from the data collected during this investigation include:

1. The data presented in TABLE 11 lead the investigators to conclude that vocational agriculture teachers tend to be of the opinion that vocational agriculture teachers do not encourage both male and female students to enroll in

vocational agriculture.

2. Based on the data presented in TABLE 12, it was concluded that agriculture students exhibit a slight tendency to be of the opinion that administrators do not encourage both males and females to enroll in vocational agriculture.

3. The data presented in TABLE 13 lead the investigators to conclude that vocational agriculture teachers, administrators of schools with vocational agriculture programs and vocational agriculture students tend to be of the opinion that students do not encourage both male and female students to enroll in vocational agriculture.

4. Based on the data presented in TABLE 14, it was concluded that vocational agriculture teachers exhibit a slight tendency to be of the opinion that parents do not encourage both male and female students to enroll in vocational agriculture.

5. The data in TABLE 15 lead the investigators to conclude that all groups tend to exhibit support of employment opportunities for females when considered as a concept.

6. Based on the data present in TABLE 16, the researchers concluded that all investigated groups exhibited support for female enrollment in vocational agriculture courses.

7. The data in TABLE 17 lead the researchers to conclude that all investigated groups exhibit a preference for male workers in agricultural occupations.

8. Based on the data presented in TABLE 18, it was concluded that students tend to exhibit the opinion of being opposed to females teaching vocational agriculture.

Recommendations

After consideration of the findings of this study, the investigators offer the following recommendations:

1. In light of the consistent preference for male workers in agriculture exhibited by the investigated groups, it is recommended that a program be developed to show career opportunities for females in agriculture.
2. Based on the opposition to females teaching vocational agriculture expressed by students, it is recommended that a program be developed to show career opportunities for females as vocational agriculture teachers.
3. The investigators further recommend that vocational agriculture teachers, administrators, students and parents increase efforts to recruit interested female students into vocational agriculture programs.

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